

Claims

1. A door for at least partially covering a doorway in a wall and being able to recover from an impact, comprising:

a resilient core;

a flexible covering that covers the resilient core to comprise a first door panel having a relaxed shape disposed along a plane, wherein the first door panel is able to substantially recover its relaxed shape after the impact causes appreciable distortion in the first door panel, and the first door panel is able to transmit in a direction within the plane a compressive load and do so without appreciable distortion to the first door panel; and

an actuation system coupled to the first door panel to render the first door panel moveable laterally to the doorway between a doorway blocking position and an unblocking position while inhibiting the first door panel from rotating about a vertical axis.

2. The door of claim 1, wherein the first door panel is able to transmit a compressive load having a magnitude of at least equal to the weight of the resilient core.

3. The door of claim 1, wherein the first door panel is able to transmit a compressive load having a magnitude of at least equal to the weight of the resilient core plus the weight of the flexible covering.

4. The door of claim 1, wherein the actuation system exerts a downward force against the first door panel when the first door panel is in the doorway blocking position.

5. The door of claim 1, wherein the resilient core is foam.

6. The door of claim 1, wherein the flexible covering is resilient.

5 7. The door of claim 1, wherein the flexible covering includes a fabric.

8. The door of claim 1, further comprising a sheet substantially parallel to the plane and interposed between the flexible covering and the resilient core, wherein the sheet is more rigid than the flexible covering and the resilient core.

9. The door of claim 1, wherein the flexible covering is less compressible than the resilient core.

15 10. The door of claim 1, further comprising a plurality of backup plates interposed between the resilient core and the flexible covering, wherein the plurality of backup plates have a rigidity greater than that of the resilient core and the flexible covering.

20 11. The door of claim 10, wherein the plurality of backup plates are spaced apart from each other.

25 12. The door of claim 10, wherein the plurality of backup plates define a clearance therebetween that allows a pair of adjacent backup plates to move relative to each other.

30 13. The door of claim 10, further comprising a replaceable seal secured between a cover plate and one of the plurality of backup plates.

14. The door of claim 13, wherein the first door panel has a substantially planar face and the replaceable seal protrudes out of coplanar alignment therewith.

15. The door of claim 1, further comprising a support beam coupled to the carrier and interposed between the resilient core and the flexible covering.

16. The door of claim 1, wherein the first door panel includes two faces that are substantially parallel to each other and are bordered by a perimeter that is substantially rectangular, and the flexible covering includes two face sections and a perimeter section, wherein the perimeter section covers the perimeter plus a portion of the two faces, and the two face sections are bonded to the perimeter section and cover most of the two faces.

17. The door of claim 1, further comprising an opposite door panel substantially coplanar with the first door panel and coupled to the actuation system such that the first door panel and the opposite door panel move apart to open the door and move towards each other to close the door, wherein the first door panel includes a leading edge seal that seals against the opposite door panel upon closing the door.

18. The door of claim 1, further comprising: a second door panel coupled to the actuation system and being substantially parallel with the first door panel and displaced out of coplanar alignment therewith;

a trailing edge seal extending from the first door panel towards the second door panel; and

a leading edge seal extending from the second door panel towards the first door panel, wherein the first door panel and the second door panel both move in a first

direction to close the door such that the trailing edge seal engages the leading edge seal, and wherein the first door panel and the second door panel both move in a second direction to open the door such that the trailing edge seal disengages the leading edge seal.

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19. The door of claim 1, further comprising a tube coupled to the first door panel and adapted to convey a gas therethrough.

20. The door of claim 1, wherein the actuation system includes an overhead track and a trolley, wherein the overhead track is adapted to be mounted adjacent the doorway and the trolley suspends the first door panel from the overhead track.

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21. A door for at least partially covering a doorway in a wall and being able to recover from an impact that temporarily deforms the door, comprising:

an overhead track adapted to be mounted adjacent the doorway;  
a resilient core;

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a flexible covering that covers the resilient foam core to comprise a first door panel suspended from the overhead track; and

a plurality of backup plates interposed between the resilient foam core and the flexible covering, wherein the plurality of backup plates have a rigidity greater than that of the resilient foam core and the flexible covering, but are moveable relative to each other so that the resilient foam core, the flexible covering, and the plurality of backup plates being moveable provides the first door panel with sufficient flexibility and resilience to recover from the impact.

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22. The door of claim 21, wherein the resilient core is foam.

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23. The door of claim 21, wherein the resilient core is an inflatable bladder.

5 24. The door of claim 21, wherein the plurality of backup plates are spaced apart from each other.

25. The door of claim 21, further comprising a replaceable seal secured between a cover plate and one of the plurality of backup plates.

26. The door of claim 21, wherein the first door panel has a substantially planar face and the replaceable seal protrudes out of coplanar alignment therewith.

15 27. A door for at least partially covering a doorway in a wall and being able to recover from an impact that temporarily deforms the door, comprising:  
an overhead track adapted to be mounted adjacent the doorway;  
20 a resilient core;  
a flexible covering that covers the resilient foam core to comprise a first door panel suspended from the overhead track; and  
a plurality of backup plates interposed between the resilient foam core and the flexible covering, wherein the plurality of backup plates have a rigidity greater than that  
25 of the resilient foam core and the flexible covering, but are moveable relative to each other;

a plurality of cover plates moveable relative to each other; and

30 a replaceable seal secured between the plurality of backup plates and the plurality of cover plates so that the resilient foam core, the flexible covering, the plurality of backup plates being moveable, and the plurality of cover plates being moveable provides the first door panel with sufficient flexibility and resilience to recover from the impact.

28. The door of claim 27, wherein the plurality of backup plates define a clearance therebetween that allows a pair of adjacent backup plates to move relative to each other.